

REMARKS

Claims 1- 24 are presently pending in the application. The Applicant expresses appreciation to the Examiner for the interview of March 4, 2004. The Examiner's comments were very helpful in advancing prosecution of the pending application.

Section 103

Claims 1-3, 5-11, 13-19 and 21-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,521,707 to Castore. By this paper, independent claims 1, 10, 18, and 24 have been amended to include the limitations of a workpiece being essentially circularly symmetrical, determining a curve fit of the work piece, and finding the centers corresponding to the diameters. Support is found for these amendments on page 5, lines 19-21, page 12, lines 8-20, page 14, lines 10-18, and accompanying figures.

Castore teaches non-contact measurements but does not recite how measuring diameters is performed. Castore states that "[t]he thread characteristics which can be measured by the device include helix variation, flank angle, surface roughness, root radius, crest radius, pitch, pitch diameter, major diameter, minor diameter." Column 11, lines 63-67. Castore provides no discussion on how it measures cross-sectional diameters or any further discussion on cross-sectional diameters. Castore is concerned with improved thread form measurements. The Applicant acknowledges that non-contact, and contact, techniques exist for measuring a diameter. However, conventional methods require tedious measurements and are more time consuming than the present invention.

Performing non-contact proximity measurements along three lateral tracks and determining a curve fit is a fundamental feature of the present invention and represents

patentable subject matter. These limitations are necessarily practiced on cylindrical workpieces that have circularly symmetrical cross-sections.

The present invention allows the user to measure diameters and find centers along the entire length by simply making non-contact proximity measurements along three parallel tracks. In this manner, an entire workpiece is profiled by passing the sensor head three times over a workpiece. The three passes may be made relatively close to one another. The sensory equipment performs all movement and computations, and the workpiece remains stationary. This is a very important feature for the roll grinding industry as it accurately and rapidly profiles the entire length of a workpiece. Without this advancement in the art, a user must rely on conventional, tedious methods for diameter measurements. When measuring diameters along an entire workpiece, the task becomes even more tedious.

Castore has no teaching of performing three parallel passes to profile an entire workpiece. Castore has no teaching of performing a curve fit to find a center of a workpiece and determine a diameter. By this paper, the independent claims recite these limitations, and they are not taught or suggested by Castore. “To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” MPEP § 2143.03. The Applicant respectfully submits that the claimed limitations are not found in Castore.

The depending claims include the limitations of their respective independent claims and represent patentable subject matter.

Claims 4, 12, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Castore and in view of U.S. Patent No. 4,989,984 to Salinger. As Castore has already been distinguished above, claims 4, 12, and 20 likewise represent patentable subject matter.

In view of the foregoing, the pending claims are patentably distinct over the cited references. Reconsideration and early allowance of all pending claims herein is respectfully requested. If there are any remaining issues preventing allowance of the pending claims that can be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,


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